

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--HIGH ENERGY INTERNAL CONVERSION ELECTRONS EMITTED FROM PRIME150 SM
AND PRIME158 GD NUCLEI IN THE (N, GAMMA) REACTION -U-
AUTHOR-(02)-PANIN, YU.N., PELEKHOV, V.I. P
COUNTRY OF INFO--USSR
SOURCE--(BNL-TR-306), IAE-1832. 16P
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ELECTRON SPECTRUM, TRANSITION RADIATION, NEUTRON ABSORPTION,
SAMARIUM ISOTOPE, GADOLINIUM ISOTOPE, RADIATIVE CAPTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0785 STEP NO--UR/0000/70/000/000/0001/0016
CIRC ACCESSION NO--AM0101158
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AM0101158

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MAGNETIC SPECTROMETER WITH A
RESOLUTION OF 0.38PERCENT WAS USED TO MEASURE THE DCNVERSION ELECTRON
SPECTRA FROM TRANSITIONS IN PRIME150 SM AND PRIME158 GD FOLLOWING
NEUTRON CAPTURE IN PRIME149 SM AND PRIME157 GD. INTERNAL CONVERSION
COEFFICIENTS AND MULTIPOLARITIES WERE DETERMINED FOR A LARGE NUMBER OF
TRANSITIONS WITH ENERGIES ABOVE 5 MEV. FACILITY: AKADEMIYA NAUK
SSSR, MOSCOW. INSTITUT ATOMNOI ENERGII.

UNCLASSIFIED

USSR

UDC 614.39/.4:658.387

PODUNOVA, L. G., FURSOVA, T. T., LIPOVTSEVA, V. V., and PANINA, A. I.
Republic Sanitary-Epidemiologic Station, RSFSR Ministry of Health, Moscow

"Some Elements of the Scientific Organization of Labor in Sanitary-
Epidemiological Stations"

Moscow, Gigiyena i Sanitariya, No 10, 1973, pp 60-62

Abstract: Councils for the scientific organization of labor were appointed in major oblast sanitary-epidemiological stations to seek ways of saving time, making more efficient use of personnel and materiel, and mechanizing labor-intensive activities and laboratory tests. Actions taken at various sanitary-epidemiological stations under the guidance of these councils include: reduction of the paper work normally required of health officers, assigning more duties to paramedical personnel, centralization or consolidation of facilities, improvement of work places, adoption of new, rapid laboratory tests, and introduction of a standard form for the collection and analysis of data on infectious diseases.

1/1

- 92 -

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SIMPLIFIED DETERMINATION OF CUMENE HYDROPEROXIDE -U-
AUTHOR--(03)-LEVSHTEYN, V.A., SLAVKINA, N.G., PANINA, K.V.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 47-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CUMENE, HYDROPEROXIDE, THERMAL ANALYSIS, PHENOL, ACETONE,
THERMOMETRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1087 STEP NO--UR/0318/70/000/005/0047/0048
CIRC ACCESSION NO--AP0134776
UNCLASSIFIED

2/2 014
 CIRC ACCESSION NO--AP0134776 UNCLASSIFIED PROCESSING DATE--13NOV70
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CUMENE HYDROPEROXIDE (I) WAS DETD.
 THERMOMETRICALLY IN THE OXID. BATCH, OXIDATE, AND END PRODUCT IN THE
 COMBINED PRODUCTION OF PHOH AND HE SUB2 CO. TO 4 ML OF AN EQUIMOLAR
 MIXT. OF PHOH AND HE SUB2 CO AND 2.5 ML OXIDATE WAS ADDED 1 DROP
 96PERCENT H SUB2 SO SUB4, THUS DECOMPG. I WITH LIBERATION OF HEAT AND
 INCREASING THE TEMP. TO 60-70DEGREES. THE TEMP. OF THE MIXT. WAS DETD.
 WITH PRECISION OF 0.1DEGREES. THE CONCN. OF I WAS DETD. BY MEANS OF THE
 DIFFERENCE OF THE INITIAL AND MAX. TEMP. WITH A GRAPH. PLOTTED WITH
 ARTIFICIAL MIXTS. OF I IN ISO,PRPH. THE RELATIVE DETN. ERROR WAS
 SIMILAR TO 1.5PERCENT. THE DETN. LASTED 3-5 MIN. FACILITY:
 KUIBYSHEV. ZAVOD. SINTEZSPIRTA, KUIBYSHEV, USSR.

UNCLASSIFIED

3

USSR

UDC 615.332 (Cycloserinum). 014.453

SAZYKIN, Yu. O., CHAYKOVSKAYA, S. M., KORCHAGIN, V. B., ~~PANTINA, M. A.~~
IVANOVA, V. N., BALITSKIY, V. A., and VAYNER, Ye. A., All-Union Scientific
Research Institute of Antibiotics and Institute of Biophysics, Ministry of
Health USSR

"Sterilization of Oxacillin Preparations With Fast Electrons"

Moscow, Antibiotiki, No 10, 1971, pp 933-936

Abstract: Exposure of preparations of the sodium salt of oxacillin in 0.5 g vials to fast electrons (10 Mev) in a linear accelerator at a dose of 2.5 Mrad resulted in complete sterility of the antibiotic, whereas, tests of control (nonirradiated) vials revealed contamination in every second or third vial. The induced radioactivity of the samples did not exceed $3.7 \cdot 10^{-10}$ curie even with minimum length of exposure. The procedure had no effect on the antibiotic activity, pharmacological activity (no evidence of toxicity or pyrogenicity) or physicochemical properties of the preparations.

1/1

- 28 -

USSR

UDC 8.74

PANINA, S. M., TROFIMOV, A. D.

"Problems of Using Punch Tape to Create Normative Base for an Automatic Control System"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo (Works of the Scientific Research and Planning and Design Institute for Introduction of Computer Engineering into the National Economy), 1971, vyp. 8, pp 50-55 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V602)

No abstract

1/1

- 67 -

USSR

UDC: 8.74

PANINA, S. M., PEREL'SHTEYN, Ts. N.

"Operating Conditions of a Computing and Information Center"

Tr. n.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo (Works of the Scientific Research And Design Institute on Introducing Computer Technology Into the National Economy), 1971, vyp. 8, pp 56-60 (from RZh-Kiber-netika, No 6, Jun 72, Abstract No 6V535)

Translation: A standard draft resolution, "Operating Conditions of Computing and Information Centers in Enterprises", worked out by the State Scientific Research and Design Institute on Introducing Computer Facilities into the National Economy, considers questions of the obligations of subdivisions of computing and information centers, the system of organizing accounting, storage and processing of incoming reference-normative and operational documentation. The materials are presented in the form of instructions, and are intended for use in the following subdivisions of the computing and information center: 1) the subdivision of reception and storage of reference-normative documentation; 2) the subdivision for receiving, checking and transmitting operational documentation; 3) the subdivision for storing and inserting changes in the punchcard file; 4) the subdivision for receiving, storing and transmitting magnetic tapes; 5) the data preparation subdivision.

1/1

- 54 -

USSR

Epidemiology

(5)

DOBROKHOTOV, B. P., MESHCHERYAKOVA, I. S., DOLOTOVA, L. A., POMANSKAYA, L. A.,
ARSEN'YEV, V. P., LEVACHEVA, Z. A., PANINA, T. V., KATELINA, A. F. and
MYASHNIKOV, Yu. A., Institute of Epidemiology, and Microbiology imeni Gamaleya,
Academy of Medical Sciences, and Tul'skaya Oblast Sanitary-Epidemiological
Station

"Application of a New Method of Detecting Tularemia Epizootics Under Practical
Conditions"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973,
pp 105-108

The timely detection, study, and prognostication of tularemia epizootics
occupy an important place in the work of divisions of especially dangerous
infections of sanitary-epidemiological stations inasmuch as this makes it pos-
sible to plan and carry out prophylactic measures against this infection
properly. However, methods employed at the present time for detecting epizoo-
tics in nature are extremely labor-consuming and require a great deal of time
both for the collection of field material and for its laboratory examination.
It is practically impossible to survey each year the entire territory serviced
by the station; therefore it is expedient to conduct a detailed study of cir-
cumstances in localities only after an approximate determination of the
1/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

probability of the presence of tularemia epizootics in any of their parts. For this preliminary estimate it was suggested that pellets of birds of prey be examined for the presence of the tularemia microbe antigen [1]. Results of the practical application of this method under the conditions of Tul'skaya Oblast are presented in this report.

On the given territory, located in the Central Russian highlands, foci of tularemia of the meadow-field type [2] are widely distributed, the principal carrier being the ordinary field mouse and the long-time preserver of the causative agent, the tick *D. pictus*. In spite of substantial changes which have taken place in the method of conducting agriculture, these foci continue to exist; although as a result of the mass vaccination of the population, instances of disease among the people are extremely rare [3].

During 1968 to 1971 regular organized zoologic-parasitological work was carried out in the Oblast. A total of 25,832 traps were set up in the fields by workers in the Division of Especially Dangerous Infections during the time indicated; 497 cubic meters of straw were displaced; 84 hectares of the control areas were dug up and as a result 2,199 ordinary field mice were caught.

In the autumn of 1968 a large number of ordinary field mice were observed in the southern rayons of the Oblast: more than 500 per hectare; and in the

USSR

DOEROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

(5)

north up to 1000-1500 in some places. This led to a concentration of small animals in the stacks (19 to 25% falling into the traps) and to the occurrence among them of tularemia epizootics. In December of 1968 and in January 1969 15 strains of the causative agent were isolated in Kurkinskiy and Shchekinskiy rayons of the Oblast: 5 from the carcasses of the field mice and 10 from the excrement. In the course of the entire year 1969 the number of field mice was low and the next increase was not registered until in the autumn of 1970: on isolated fields (clover) up to 2000, and in Shchekinskiy and Odoyevskiy rayons, up to 5000 per hectare. In 1971 the number of ordinary field mice in the entire Oblast was extremely low. During these years negative results were obtained in bacteriological investigations of small animals; only one culture of the tularemia microbe was isolated in June 1970 from the ticks *D. pictus* collected from cows in Suvorovskiy Rayon. Thus from 1968 to 1971 during an intensive inspection of the Oblast, the presence of tularemia was established by a bacteriological method in only three rayons -- Kurkinskiy, Shchekinskiy, and Suvorovskiy.

During 1969 to 1971, 1490 pellets of birds of prey were collected and examined in the Oblast. Their collection took place primarily in the spring 3/10

USSR

(5)

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

(April - May) at the time of three-to-four-day field trips by automobile; a certain number was collected incidentally while other zoological work was being carried out. The pellets were most frequently found near poles of electro-transmission and communications lines, on stacks, and near other structures on the landscape. During the entire time in the collection of pellets approximately 30 man-days were used which comprised an extremely insignificant part of the time expended by the division for inspecting the Oblast. Unfortunately in some of the 18 rayons covered by the collection, an insufficient number of pellets were found, which did not permit the positive determination of an epizootic condition of the rodent population in their territory (See Drawing). The number of pellets collected at any point was directly dependent on the number of ordinary field mice in a given locality: under an increased concentration of these rodents more birds of prey were observed and it was possible to find more pellets.

In the spring collections pellets (which had been preserved since autumn) of ordinary and rough-legged buzzards that winter in the territory predominated (more than 90%). A large portion of the pellets of the lesser falcons had disappeared by this time. In 88 to 96% of the pellets the remains of ordinary

4/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

field mice were encountered; those of other kinds of mammals (mice of plowed land, field mice, grey hamsters, gophers, weasels, shrews) and birds were rarely encountered. During a selective examination in 1969, the remains of 128 small animals were detected in 85 pellets; in 1970, in 232 pellets, the remains of 356 small animals; and in 1971, the remains of 200 small animals in 140 pellets, giving an average of 1.5 small animal per pellet.

In this manner the 1490 pellets collected contained more small animals than those obtained in the fields during these years for investigation by all other methods. One should also keep in view that by consuming in nature primarily the weakened animals or their carcasses, birds of prey ensure the selection out of the animal population of precisely those individuals which are desirable for bacteriological investigation.

The presence of an antigen in the pellets positively confirmed the fact of an epizootic condition while through an analysis of the bone remains it was possible to determine the kinds of mammals involved in the epizootic process.

For the purpose of detecting the antigen the antibody neutralization reaction was employed. The material was prepared and the reaction carried out by the method described earlier [1].

5/10

USSR

DOBRUKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

The antigen of the tularemia microbe was detected in 173 pellets collected in the territory of 11 rayons of the Oblast. Only those results were considered positive in which there was a sharp delay in hemagglutination which was observed in titrations (from the initial dry weight of the pellet); 1:10 - 1:20 in 73 cases; 1:40 - 1:80 in 67 cases; 1:160 - 1:320 in 23 cases; 1:640 - 1:1280 in 12 cases (See Table).

The number of sites where pellets were found containing an antigen was significantly greater than the number of sites where cultures were formed -- 21 against 4. This made it possible to establish with far greater precision the boundaries of epizootics that had transpired, and it testified to the fact that an epizootic situation with respect to tularemia still exists in a significant part of the territory of Tul'skaya Oblast. Moreover, the presence of epizootics was successfully established for the years having a smaller number of ordinary field mice where it is impossible to detect the causative agent of tularemia by the usually applied methods.

In such torpid epizootics the tularemia microbe antigen is detected only in 1 to 1.5% of the pellets. Cultures of the tularemia microbe from rodents can be isolated only at the time of sufficiently intensive epizootics, and in 6/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

Such places more than 20% of the collected pellets contained the tularemia microbe antigen.

In this way, results of an examination of pellets (by the antibody neutralization reaction) collected in early spring in meadow-field foci of tularemia can serve as a precise indication of the existence during the past winter of epizootic tularemia in the territory being surveyed and its magnitude. The revelation of this fact is extremely important in determining the enzooticity of the territory for the purpose of conducting prophylactic measures, the first and foremost being systematic vaccinations. Necessarily in a suspect territory a more thorough collection of material must be achieved for the purpose of isolating the causative agent of tularemia by ordinary bacteriological methods.

Conclusions

1. Examination of pellets of birds of prey collected in springtime in meadow-field foci of tularemia for the presence of the tularemia microbe antigen makes it possible quickly and with a small expenditure of work to establish the past winter's epizootics of this infection and their intensity over extensive areas.

7/10

USSR

(5)

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

2. In the course of the years 1969 to 1971, tularemia enzooticity was established by the indicated method in 11 rayons of Tul'skaya Oblast; whereas by the bacteriological method the causative agent was detected in only 3 rayons.

3. With a sufficient amount of research material (100 to 200 pellets from each point) it will be possible to successfully detect each year even torpid tularemia epizootics, given a reduced number of ordinary field mice per focus.

4. The suggested method is completely suitable for use in work of divisions of especially dangerous infections of sanitary-epidemiological stations.

BIBLIOGRAPHY

1. Dobrokhotov, B. P., Meshcheryakova, I. S., Zh. Mikrobiol. [Journal of Microbiology], 1969, No 12, p 38.
2. Myasnikov, Yu. A., Prirodnyye Ochagi Tulyaremi Srednerusskoy Vozvysheynosti, ikh Epidemiologicheskiye Osobennosti i Profilaktika [Natural Tularemia Sites of Central Russian Highlands, Their Epidemiological Features and Prophylactics], Thesis for Doctor of M., 1963.
4. Olsuf'yev, N. G., Dobrokhotov, B. P. et al., Zh. Mikrobiol., 1971, No 6, p 117.

8/10

USSR

DOBROKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, 1973, pp 105-108

NUMBER OF PELLETS BY YEAR

RAYON	1969		1970		1971	
	Total	With Antigen	Total	With Antigen	Total	With Antigen
Kurkinskiy	149	33	24	--	22	1
Yefremovskiy	58	23	40	--	14	--
Kamenskiy	--	--	14	--	40	1
Chernskiy	--	--	8	--	117	--
Teplo-Orarevskiy	27	4	24	--	--	--
Kireyevskiy	--	--	30	--	166	2
Odoyevskiy	--	--	2	--	98	42
Dubenskiy	--	--	--	--	185	55
Leninskiy	--	--	22	--	168	5
Venevskiy	2	--	67	2	--	--
Yasnogorskiy	--	--	23	3	--	--
Zaokskiy	--	--	4	--	46	2
Aleksinskiy	--	--	12	--	36	--
Prochiye	8	--	50	--	32	--
Total	244	60	320	5	932	108

9/10

USSR

DOBRUKHOTOV, B. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobio-
logii, No 7, 1973, pp 105-108

Drawing

EXAMINATION OF PELLETS OF BIRDS OF PREY FOR
TULAREMIA MICROBE ANTIGEN CONTENT IN MEADOW-
FIELD FOCI OF TUL'SKAYA OBLAST

1. Sites of Formation of Cultures of Tularemia Microbe From the
Smaller Mammals, From Their Excrement and Ixodic Ticks
 2. Collection Point of Pellets in 1969
 3. Collection Point of Pellets in 1970
 4. Collection Point of Pellets in 1971
- Crosshatched symbols are points where the tularemia microbe antigen was
found in pellets; dotted symbols are points at which more than 5 pellets
were collected.

- Key:
- | | |
|---------------|--------------|
| 1. Yasnogorsk | 7. Kireyevsk |
| 2. Venev | 8. Odoyev |
| 3. Tula | 9. Teploye |
| 4. Dubna | 10. Kurkino |
| 5. Suvorov | 11. Yefremov |
| 6. Shchekino | |

10/10

USSR

UDC (539.551+531.424):(546.24+546.683-143)

ANDRIANOVA, T. N., ALEKSANDROZ, A. A., OKHOMIN, V. S., RAZUMEYCHENKO, L. A.,
PANINA, Z. I.

"Viscosity and Density of Melts in the Thallium-Tellurium System"

Teplofizika Vysokikh Temperatur, Vol 9, No 5, 1971, pp 934-937.

Abstract: Results are presented from studies of the viscosity and density of melts in the thallium-tellurium system in the concentration interval from 32 at.% Te to 100% Te and in the temperature interval from the melting point to 1,300°K. Analysis of the isotherms of the properties studied shows the existence in the liquid phase of the stable compound Tl_2Te , which does not dissociate over a broad temperature range. An analysis is presented of structural changes in melts of the concentrations studied.

1/1

USSR

UDC 621.362.2

ANDRIANOVA, T. N., ALEKSANDROV, A. A., OKHOTIN, V. S., PANINA, Z. I.,
RAZUMEYCHENKO, L. A.

"Investigation of Semiconductor Systems Based on Sb_2Se_3 in the Molten State"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute):
1970, vyp. 75, pp 192-196 (from *RZh-Elektrotehnika i Energetika*, No 1,
Jan 71, Abstract No 1A159)

Translation: An investigation is made of the effect of various elements on the structure of antimony selenide in the molten state. The kinematic viscosity and density of melts of Sb, Se, Zn, Cu, Ga, In, Te and Sn in antimony selenide were measured. The change in structure of melts of 80 at.% Sb_2Se_3 + 20 at.% Ga and 80 at.% Sb_2Se_3 + 20 at.% Sn takes place over a narrow temperature interval of $\Delta t \approx 50^\circ K$, while the structure of a melt of 80 at.% Sb_2Se_3 + 20 at.% In varies continuously over the entire temperature interval from 950 to $1300^\circ K$. Two illustrations, bibliography of two titles. A. Kh. Cherkasskiy.

1/1

USSR

DEDIKOV, E. A., PANISHEV, A. V.

"Setup of Minimum Width in a Connected Graph without Contour"

Pribory i Sistemy Avtomatiki. Resp. Mezhd. Temat. Nauch.-Tekhn. Sb.
[Automation Instruments and Systems. Republic Interdepartmental Thematic
Scientific and Technical Collection], 1973, No 26, pp 52-57 (Translated
from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V409, by
the authors).

Translation: A setup of minimum width is constructed in a graph. Its appli-
cations to information-logic structures defined by graphs of algorithms is
indicated.

1/1

- 49 -

USSR

UDC: 51

DEDIKOV, E. A., PANISHEV, A. V., TIKHENKO, A. Yu., FEDOROV, A. A.
"Method of Ordering and Analysis of the Structure of an Information Model of
Data Processing"

Pribory i Sistemy Avtomatiki. Resp. Mezhd. Temat. Nauch.-tekhn. Sb. (Automa-
tion Devices and Systems. Republic Interdepartmental Thematic Scientific and
Technical Collection], 1972, No 24, pp 45-51 (Translated from Referativnyy
Zhurnal Kibernetika, No 11, 1972, Abstract No 11V479, by the authors)

Translation: A formal analysis is presented of the structure of an information
model of data processing. The apparatus of graph theory is used to represent
the structure. The problem of ordering and analysis of the structure is stated.
Algorithms and block diagrams are developed for the solution of a number of
problems of structural analysis, and examples are presented.

1/1

-22-

USSR

UDC 51

DEDIKOV, E. A., PANISHEV, A. V., TIKHENKO, A. Yu., FEDOROV, A. A.

"On One Method for the Ordering and Analysis of the Structure of an Information Model for Data Processing"

Pribery i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb.
(Automation Devices and Systems. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No. 24, pp 45-51 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V479)

Translation: A formal analysis is given of the structure of an information model for data processing. The apparatus of the theory of graphs is used to represent the structure. The problem of ordering and analysis of the structure is formulated. Algorithms and block diagrams are developed for solving many problems in the analysis of the structure, and examples are given. Authors abstract.

1/1

- 62 -

USSR

UDC 547.752.753.755.07:542.953

SHVEDOV, V. I., PANISHEVA, Ye. K., VLASOVA, T. F., GRINEV, A. N., USSR
Institute of Chemical-Pharmaceutical Scientific Research imeni S.
Ordzhonikidze, Moscow

"The Synthesis and Aminomethylation of 6-Hydroxyindoles"

Riga, Akademiya Nauk Latvinskoy SSR, Himiya Geterotsiklicheskikh Soedinenii,
No 10, Oct 73, pp 1354-1356

Abstract: It was found that, while reaction of p-benzoquinone with β -aminocrotonic ester or N-methyl- β -aminocrotonic ester at 0°C in acetic acid produced 5-hydroxyindoles, the reaction of p-benzoquinone with N-aryl- β -aminocrotonic ester under the same conditions produced 6-hydroxyindoles. Thus, the substituent on nitrogen determines whether the ester reacts at the double bond or the carbonyl group of p-benzoquinone. Reacting the 6-hydroxyindoles with bisdimethylaminomethane produced 6-hydroxy-7-dimethylaminomethylindoles. Bromination and nitration of 6-methoxyindoles and 6-acetoxyindoles led to substitution at position number 5, which is explained by the fact that bromination and nitration take place in acid solution, and aminomethylation in basic. Structure determination was by NMR spectroscopy.

1/1

- 17 -

173 018
UNCLASSIFIED
TITLE--GENERATION OF MICROSEISMIC OSCILLATIONS IN THE SEA OF OKHOTSK AND
MOVEMENT OF A SOURCE OF EXCITATION OF MICROSEISMS ACROSS THE KAMCHATKA
AUTHOR--(021)-TABULEVICH, V.N., PANCHISHKO, YU.N.
COUNTRY OF INFO--USSR, PACIFIC OCEAN
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ZEMLI, NO 3, 1970, PP
75-78
DATE PUBLISHED--70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--MICROSEISM, OSCILLATION, SEA FLOOR, EARTHQUAKE, EXPLOSION,
WAVE PROGAGATION, SEISMOLOGIC STATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/0723
CIRC ACCESSION NO--AP0110453
STEP NO--UR/0387/70/000/003/0075/0078
UNCLASSIFIED

2/3 018

CIRC ACCESSION NO--AP0110453
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. DETERMINATION OF THE SOURCE OF MICROSEISMS OF THE FIRST KIND AND THE TRACING OF PERIODIC OSCILLATIONS PROPAGATING IN THE EARTH MAKE IT POSSIBLE TO OBTAIN NEW INFORMATION DIFFERENT FROM THAT OBTAINED FROM OBSERVATION OF WAVES PROPAGATING FROM EARTHQUAKES AND EXPLOSIONS. THE GENERATION OF MICROSEISMS IS POSSIBLE IN THOSE PARTS OF OCEANS AND SEAS WHERE THERE ARE NO ACTIVE EARTHQUAKE ZONES. MICROSEISMIC OSCILLATIONS ARE TRANSMITTED TO THE OCEAN FLOOR, THAT IS, TO A "FOCAL DEPTH" OF SEISMIC EXCITATION KNOWN WITH A HIGH ACCURACY. THE LARGE NETWORK OF SEISMIC STATIONS WHICH HAS BEEN ESTABLISHED DURING RECENT YEARS MAKES IT POSSIBLE TO DETERMINE THE SOURCE OF EXCITATION OF MICROSEISMS BY THE FREQUENCY SYNCHRONISM AND AMPLITUDE DETERMINATION METHOD DESCRIBED IN AN EARLIER STUDY BY ONE OF THE AUTHORS (V. N. TABULEVICH, IZV. AN SSSR, SER. GEOFIZ., NO 11, 1959). THIS ARTICLE DISCUSSES IN DETAIL TWO MICROSEISMIC STORMS GENERATED BY TYPHOONS WHICH PASSED OVER THE SEA OF OKHOTSK, RODE OVER THE KAMCHATKA PENINSULA AND PASSED INTO THE PACIFIC OCEAN (26-27 OCTOBER AND 28-31 OCTOBER 1965). IT IS SHOWN THAT DETERMINATION OF THE EXCITATION SOURCE OF MICROSEISMIC OSCILLATIONS MADE POSSIBLE RELIABLE TRACING OF THE PROPAGATION OF THESE OSCILLATIONS FOR EXTREMELY GREAT DISTANCES. THE SEISMIC STATIONS IRKUTSK AND TIKSI REGISTER MICROSEISMIC SIGNALS FROM THE SEA OF OKHOTSK AND THE PACIFIC OCEAN. THE SEISMIC STATION ANDIZHAN DETECTS FIVE SECOND MICROSEISMS OF THE SEA OF OKHOTSK. PROCESSES ASSOCIATED WITH PASSAGE OF AN ATMOSPHERIC LOW ACROSS THE LAND WERE DETECTED.

UNCLASSIFIED

3/3 018

CIRC ACCESSION NO--AP0110453

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--SEA WAVES ARE A COMPLETELY NECESSARY "INTERMEDIARY" IN THE GENERATION OF MICROSEISMS IN ACCORDANCE WITH THE LONGUET HIGGINS THEORY. THE METHOD OF FREQUENCY SYNCHRONISM AND AMPLITUDE DETERMINATION USED IN WORK ON THE CASPIAN SEA CAN BE USED IN ANY REGION, BEING OF A GENERAL NATURE.

FACILITY: IRKUTSK POLYTECHNIC INSTITUTE.

UNCLASSIFIED

USSR

UDC 621.575:536.24.001.5

ROZENFEL'D, L. M., PANIYEV, G. A., KUZ'MITSKIY, Yu. V., and PARKHOMENKO, F. P., Institute of Thermal Physics, Siberian Branch, Academy of Sciences, USSR

"Experimental Investigation of Absorption and Desorption of Water Vapors by a Solution of Lithium Bromide"

Moscow, Kholodil'naya Tekhnika, No 10, Oct 72, pp 31-35

Abstract: This work was devoted to an investigation of mass-transfer units with a developed phase--mass-transfer unit contact surface using spraying type mass-transfer units. A schematic and picture of the unit are given for investigating the adiabatic-isobaric processes of absorption and desorption of water vapors by a solution of lithium bromide. Tests were conducted in a steady-state mode of operation of the experimental unit at constant internal and external parameters and observation of thermal balance.

Graphs were plotted for the change of relative saturation of solution and change of temperature of the dispersed liquid flow along the absorber height and the change of relative vaporization of the solution and change of temperature of the dispersed flow of liquid along the generator height. From 1/2

- 180 -

USSR

ROZENFEL'D. L. M., et al., Kholodil'naya Tekhnika, No 10, Oct 72, pp 31-35

these graphs an analysis was made which made possible the conclusion that the most intensive process of absorption occurs directly behind the sprayer. The conducted tests show the mass-transfer to have a high efficiency of the studied processes and permitted to establish the characteristic features of absorption and desorption in sprayer type units. 5 figures, 1 table, 5 bibliographical references.

~~PAVLOVICH, V. V.~~
~~PANKEVICH, V. V.~~

"Concerning the Article of M. D. Maerheus and S. P. Khazankina, "Clarification of Solution of Systems of Nonlinear Algebraic and Transcendental Equations by the Generalized Method of Steffensen"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collection of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 6-8, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V546 by the author).

Translation: A procedure is suggested for solution of a system of nonlinear algebraic and transcendental equations by applying the so-called "reduction principle" to the generalized method of Steffensen. In comparison with other methods of interpretation of difference methods, the "reduction principle" reduces the number of required arithmetic operations significantly.

1/1

- 70 -

USSR

UDC 536.421.4+536.421.1

YESIN, V. O. and PANEIN, G. N.

"Kinetics of the Growth of Dendrites in Tin"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Minsk, "Nauka i tekhn." 1971, pp 152-157 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E381)

Translation: The dependence of the growth rate (GR) of dendrites at the free surface of a pure Sn alloy on the degree to which it is supercooled is investigated. The GR of the dendrites was measured by two independent methods: by rapid cinematography and by two thermocouples (at a distance of 5-8 mm). The highest GR of the Sn dendrites was 624 cm/s for a general supercooling of 33.6° of the alloy.

1/1

- 54 -

UDC [537.226+537.311.33]:[537+535]

SSR

PAN'KIN, V. G., RZHANOV, A. V., and SVITASHEV, K. K.

"Photoelectric Phenomena on Boundary Between Two Single-Crystal Germanium Blocks"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds with Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, pp 216-227 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE807 by V. B. SANDOMIRSKIY)

Translation: The authors investigated the photovoltage (PV) and photoconductivity (PC) of the contact of two n-Ge single crystals at 300 and 77° K. Dimensions of specimens: 17x12x3 mm; specific resistances at 300° K: of the order of 40 ohm·cm. The PV distribution along the specimen has two maxima of opposite signs on both sides around the interface. The PV sign corresponds to the blocking band bending around the interface (IF). Contact is nonsymmetrical. The form of the current-voltage characteristic agrees with that reported in the literature. The PV spectral dependence indicates a change of charge in the surface states of the IF on illumination. The conclusion was drawn that each block has its own system of surface states. PC also increases sharply as the "signal probe" approaches the IF. The PC localized at the IF is

1/2

USSR

PAN'KIN, V. G., et al., Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, pp 216-227 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE807 by V. B. SANDOMIRSKIY)

observed when excited by light in the region of impurity absorption. It can be positive or negative and varies with the superposition of voltage.

2/2

- 58 -

1/2 008 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SYNTHESIS AND PROPERTIES OF 1,2,4,TRIAZINO(4,5,A), BENZIMIDAZOLE
DERIVATIVES. I. 4,OXO, N, AND O,ALKYL DERIVATIVES OF
AUTHOR--(02)-PANKINA, Z.A., SHCHUKINA, M.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SUEIN. 1970, (2), 245-7

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BENZIMIDAZOLE, CHEMICAL SYNTEHSIS, HYDRAZINE ORGANIC
DERIVATIVE, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1195

STEP NO--UR/0409/70/000/002/0245/0247

CIRC ACCESSION NO--AP0054094

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0054094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 2 G

2,BENZIMIDAZOLECARBOXYLIC ACID HYDRAZIDE (IA) IN HC(OEt) SUB3 WITH SLOW
DISTN. OF EtOH OVER 45 MIN AT 140-85DEGREES GAVE 80PERCENT
4,OXO,1,2,4,TRIAZINO(4,5,A)BENZIMIDAZOLE (I), M. 336DEGREES. SIMILARLY
WAS PREPD. 47PERCENT 1,ME DERIV. (II), DECOMP. 345DEGREES, FROM
MEC(OEt) SUB3 AND THE ABOVE HYDRAZIDE, OR, ALTERNATIVELY, BY TREATING
THE HYDRAZIDE WITH AC SUB2 D TO FORM THE ACETYLDIAZOLE, M. 178DEGREES,
AND HEATING THIS WITH POCL SUB3 IN C SUB6 H SUB6 12 HR. I HEATED 4.5 HR
WITH ETONA, EtOH, FOLLOWED BY MEI, GAVE 83PERCENT
3,METHYL,4,OXO,1,2,4,TRIAZINO(4,5,A)BENZIMIDIAZOLE, M. 308-10DEGREES;
ETI SIMILARLY GAVE 42PERCENT 3-ET ANALOG, M. 232DEGREES. II SIMILARLY
GAVE 84PERCENT 1,3,DIMETHYL,4,OXO,1,2,4,TRIAZINO(4,5,A), BENZIMIDAZOLE,
M. 241-3DEGREES. I AND ME SUB2 SO SUB4 IN PHNO SUB2 HEATED 45 MIN AT
130-40DEGREES GAVE THE METHOSULFATE OF
4,METHOXY,1,2,4,TRIAZINO(4,5,A)BENZIMIDAZOLE, DECOMP. 210DEGREES; FREE
BASE M. 207DEGREES. IA HEATED 6 HR WITH AC SUB2 D GAVE 18PERCENT
2,(2,BENZIMIDAZOLYL),1,3,4, OXADIAZOLE, M. 276DEGREES, WHICH WITH ETONA,
FOLLOWED BY MEI, GAVE IN 5 HR, 55PERCENT
2,(N,METHYL,2,BENZIMIDAZOLYL),5,METHYL,1,3,4,OXADIAZOLE, M.
173-5DEGREES. I HEATED 6 HR WITH 10PERCENT CHL GAVE 44PERCENT
2,BENZIMIDAZOLECARBOXYLIC ACID AND 28PERCENT BENZIMIDAZOLE. THE FORMER
WAS OBTAINED IN 49PERCENT YIELD FROM I AFTER 5 HR HEATING WITH 40PERCENT
NAOH.

UNCLASSIFIED

USSR

UDC: 681.325.3

PAN'KO, S. P., Institute of Physics, Siberian Department of the Academy of Sciences of the USSR

"A Digital Instrument for Measuring Time Intervals"

USSR Author's Certificate No 325700, filed 10 Feb 70, published 27 Mar 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B460 P)

Translation: A digital instrument for measuring time intervals is proposed which contains a maser and a series circuit comprised of a flip-flop, switch, and counter.

To increase measurement accuracy the device contains an OR circuit, an additional flip-flop, a delay line, a tapped delay line, AND gates, and a code converter whose outputs are connected to the counter inputs, while the converter inputs are connected to the outputs of the AND gates. One input of the AND gates is connected to the output of the maser, and the other is connected to the tapped delay line outputs. The input of the tapped delay line is connected through the delay line to the output of the OR circuit whose inputs are connected to the input terminals of the device and to the additional flip-flop, whose output is connected to the counter.

1/1

UDC 621.385.632.2 (088.8)

USSR

LAGRANSKIY, L.M., PAN'KOV, I.A., CHIGIRINSKIY, P.YA.

"M-Type Amplifier"

USSR Author's Certificate No 256094, filed 8 June 68, published 19 Mar 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A159F)

Translation: The M-Type crossfield microwave power amplifier with nonsynchronous performance described contains an electron gun, collector, a decelerating system, and a negative electrode. This is for improvement of the uniformity of the amplitude-frequency characteristics, an increase of the stability of the amplitude of the output signal during change of the feed voltages, and for a decrease of the unit thermal load in the elements of the decelerating system. In the direction of movement of the electron flow, the electrode is divided into at least two parts. The parts of the electrodes found under identical potentials are located at different distances from the decelerating system, and those found under different potentials -- at equal distances from the retarding system.

1/1

USSR

UDC: 621.373.531.1(088.8)

BATYRSHIN, D. M., GLADCHENKO, V. N., GRACHEV, G. F., OPESKIN, V. D.,
PANKOV, S. V.

"A Royer Generator"

USSR Author's Certificate No 267678, filed 15 Jun 68, published 5 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G232 P)

Translation: This Author's Certificate introduces a Royer generator with
provision for controlling the frequency of the generated pulses over a
broad range. The transformer windings connected to the collectors of the
transistors are shunted by a variable resistor.

1/1

- 116 -

Mechanical Properties

USSR

UDC 669.14.018.2:620.17

TIKHOMIROV, V. V., SHAKHNAZAROV, YU. V., PANKOV, A. G., and PCPOV, V. D.

"Mechanical Properties and the Breaking Strength of Steel N18K9M5T After Different Aging Methods"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, 1971, pp 6-8

Abstract: The effect of the temperature and the aging period on mechanical properties of N18K9M5T martensitic-aging steel melted down in a 0.5-ton vacuum-induction furnace was investigated. The breaking strength was rated by the specific work of impact bending of specimens with a fatigue crack and the factor K_G characterizing the intensity of stresses in plane stress condition. It was found that low-temperature aging at 425-450°C ensures high strength properties than high-temperature aging at 480-500°C. The factor K_G was found to represent a more responsive characteristic in rating the tendency of steel to brittle failure than the energy to fracture determined on an impact specimen with a preliminarily applied fatigue crack. Four illustrations, six biblio, refs.

1/1

USSR

UDC 620.194.620.197.6

KARLASHOV, A. V., GAYNUTDINOV, R. G., and PANKOV, A. T., Kiev Institute of Civil Aviation Engineers

"Relationship of the Effectiveness of Cladding Alloy D16 to the Aggressiveness of a Medium in Corrosion Fatigue"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, No 3, 1973, pp 23-27

Abstract: Results are presented from a study of the fatigue strength of type D16 clad aluminum alloy when subjected to air, tap water, water condensate, and 3% solution of NaCl. The D16 alloy had the following chemical composition (in %): 4.1 Cu, 1.6 Mg, 0.5 Mn, 0.4 Fe, 0.3 Si, 0.24 Zn, 0.01 Ni, and 0.04 Ti. Mechanical properties of the clad aluminum material were:

	Thickness, mm	TS, kg/mm ²	YS, kg/mm ²	Elongation %
D16AT (clad)	1.85	45.6	32.18	18.61
D16T (unclad)	1.82	46.5	32.68	19.03

It was found that the fatigue strength of clad D16 is lower than that of the unclad alloy in air, about the same in tap water, and somewhat increased 1/2

USSR

KARLASHOV, A. V., et al., Fiziko-Khimicheskaya Mekhanika Materialov, No 3, 1973, pp 23-27

in the condensate and 3% NaCl. The main conclusion drawn is that cladding does not improve the fatigue strength or corrosion resistance of alloy D16 to warrant its use in the manufacture of aircraft skins (fairings, wings, fuselage, etc.) Four figures, one table, six bibliographic references.

2/2

- 18 -

PA0046411

PANKOV - B.N.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

241531 BRIDGE WITH INDUCTIVELY LINKED ARMS FOR
MEASURING THE PARAMETERS OF IMPEDANCE, contains
source of sinusoidal voltage (1), potential trans-
former (2), induction current comparator (3),
standard measure of effective resistance or of
reactance (4), converter (5), balance indicator (6)
with phase sensitive detectors reacting to square
components of the output current of measuring
circuit relative to voltage fed to their reference
(7). Impedance to be tested (8) is connected betw-
een the winding (9) of the potential transformer
(with m coils) and the current input (10) of the
converter (5) (with very small input resistance).
Current output (11) of the converter is connected

2/70

4
5/9

Institut Avtomatiki i Elektrometrii Sibirskogo
Otdeleniya AN SSSR

4

19781611

AA0046411

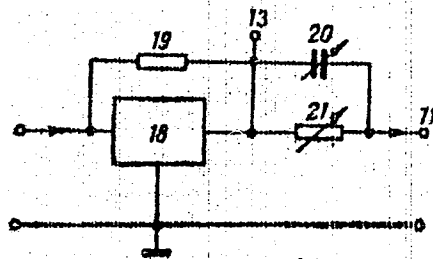
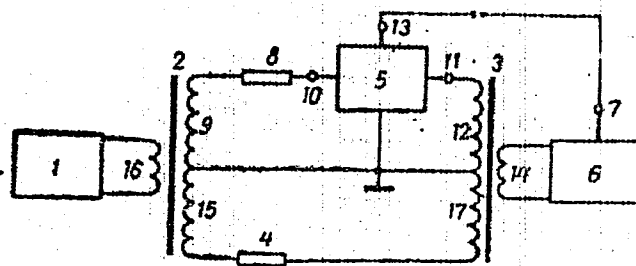
to winding (12) of comparator (with p coils) and potential output (13) to reference inputs (7) of phase sensitive detectors. Current input of balance indicator (6) is connected to output winding (14) of comparator (3). Standard measure (4) is connected to winding (15) of potential transformer (with n coils), whose input winding (16) is connected with output of voltage source (1) and with winding (17) of comparator (with q coils).

In use, the absence of non-balance signal on the output of one of the phase sensitive detectors corresponds to the bridge balance on the resistance component, and the absence on the output of the other phase sensitive detector corresponds to bridge balance on the reactance component.

24.1.68 as 1211708/18-10. S.M. KAZAKOV & B.N. PANKIV.
SIBERIAN AUTOMATION & ELECTROMETRY INST. (17.9.69)
Bul 14/18.4.69. Class 21e. Int. Cl. G 01 r.

19781612

AA0046411



19781613

USSR

UDC 532.517.4

FRENKEL', L. I., NAZARENKO, S. B., ~~PAIKOV, D. V.~~

"Instrument for Measuring Turbulence in Heterogeneous Flows"

Tr. Tambov. in-ta khim. mashinostr. (Works of the Tambov Institute of Chemical Machine Building), 1971, vyp. 7, pp 22-25 (from RZh--Metrologiya i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.788)

Translation: An instrument is described which permits measurement of the instantaneous velocity components of a gas in heterogeneous flows. The primary advantage of the instrument is the possibility of measuring the pulsation components of the velocity in a large frequency range (to 100 kilohertz). There are 4 illustrations and the bibliography has 3 entries.

1/1

- 129 -

P
USSR

UDC 621.385.6(088.8)

LAGRANSKIY, L.M., PAN'KOV, I.A., CHIGIRINSKIY, P.Ya.

"M-Type Beam Device"

USSR Author's Certificate No 253940, Filed 25 June 68, Published 3 Mar 70 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A175P)

Translation: A M-type beam device with a transverse nonuniform magnetic field is proposed which contains an electron gun, an interaction space formed by a decelerating system and a negative electrode, and a collector. With the object of increasing power in the device, a plate of ferromagnetic material is introduced, located outside of the interaction space as viewed from the direction of the negative electrode and parallel to the latter.

1/1

- 774 -

USSR

UDC: 62-225-752

PANKOV, N. P., KRYUKOV, A. I.

~~Effect of Axial Force on the Frequency Characteristic of Compensated Connection Lines in an Aircraft Engine"~~

Tr. Ufim. aviats. in-ta (Works of the Ufa Aviation Institute), 1970, vyp. 14, pp 3-8 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 3, Mar 71, Abstract No 3.34.28)

Translation: The natural frequencies of tubing with a displacement compensator are appreciably dependent on the axial force which develops in the connecting lines when compensating for installation and thermal displacements, as well as under the effect of the pressure of the working fluid. Analytical equations are derived which can be used to account for the effect of axial loading on the frequency characteristics of compensated connecting lines in an aircraft engine. Two illustrations. Résumé.

1/1

- 26 -

USSR

UDC:621.438.018-253.5:621.9.015

PANKOV, O.M., BOYKOV, O.I. and MILITONOV, G.V.

"Effect of Surface Finish and Tolerances of the Turbine Blade's Working Part on the Effectiveness of Gas Turbine Installation"

Moscow, Sb. Gasoturbin. i Kombinir. Ustanovki (Symposium on Gas Turbine and Combined Installations), 1971 (1972), pp 255-260 (from Referativnyy Zhurnal - Turbostroyeniye, 1973, Abstract No 3.49.157)

Translation: The present standards require the surface finish of the blades to be $\nabla 8 - \nabla 9$. It is pointed out that this requirement is unnecessarily strict and results in increased blade cost. Operating experience with gas turbine installations by foreign firms confirms the conclusion that blade surface finish over $\nabla 6$ is not required. It is pointed out that it is necessary to define clearly the section of the blade surface to which the standards apply. 2 illustrations. 9 tables. 2 references.

1/1

- 86 -

USSR

UDC: 51

PANKOV, P. I., RAKUZINA, O. Ya.

"Prospective Planning of the Development of Land Reclamation in the Automatic Control System of the USSR Water Resources Ministry"

Mat. Metody v Ekon. [Mathematical Methods in Economics--Collection of Works], No 9, Riga, Zinatne Press, 1972, pp 5-22 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V490)

Translation: Several multiple-index models of linear programming are discussed.

Simulations

USSR

UDC 51

PANKOV, P. I., RAKUZINA, O. Ya.

"Planning for Future Development of Land Improvement at the Atomic Power Plant of Minvudkhov USSR"

V sb. Mat. metody v ekon. (Mathematical Methods in Economics -- Collection of Works), No. 9, Riga, "Zinatne", 1972, pp 5-22 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V490)

Translation: Several multi-index models of linear programming are described.

1/1

AAO 043496

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

240784 TUNABLE BAND CIRCULATOR. The ferrite
inserts used for tuning have been made
in various shapes, squares, triangles and variants
on these basic figures. A judical choice provides
a good selection of frequencies. 22.6.67. as
1166338/26-9. V.A. PARKOV. (27.8.69.) Bul.13/1.4.69.
Class 21a4. Int.Cl. H01p.

WT

4

1/1

19761885

1/2 040 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TUNABLE RECEIVER OF LONG WAVE INFRARED RADIATION -U-
AUTHOR--(03)-NAD, F.YA., PANKOV, V.G., RULEV, K.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, VOL 15, NO 2, 1970, PP
371-375
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IR RADIATION, PHYSICS LABORATORY INSTRUMENT, RECEIVER
CHARACTERISTIC, IR RECEIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1153 STEP NO--UR/0109/70/015/002/0371/0375
CIRC ACCESSION NO--AP0112255
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--APG112255

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APPARATUS IS DESCRIBED, WHICH OPERATES AS A SELECTIVE NARROW BAND TUNABLE DETECTOR OF INFRARED RADIATION IN THE 25-300 MICROMETER RANGE AND ALSO, AS A WIDE BAND "ELECTRON BOLOMETER" IN THE 300-2000 MICROMETER RANGE. IT CONSISTS OF THREE BLOC UNITS: 1) THE HELLIUM CRYOSTAT WITH A LIGHT GUIDE, A SUPERCONDUCTING SOLENOID, AND A PHOTSENSITIVE ELEMENT; 2) A STAND FOR ELECTRON INSTRUMENTS; AND 3) A MODULATOR. ITS SENSITIVITY IS RELATIVELY INDEPENDENT OF THE WAVE LENGTH FROM SEVERAL MILLIMETERS DOWN TO 600 MICROMETERS. THE SENSITIVITY SPECTRAL CHARACTERISTICS OF THE APPARATUS AT A MAGNETIC FIELD VALUE OF SIMILAR TO 22.5 KOE (AS RECORDED BY A VACUUM MONOCHROMATOR WITH CHANGEABLE ECHELETTE GRATINGS WHICH OPERATES IN THE 20-2000 MICROMETER RANGE) IS PRESENTED. IT HAS A DEFINITE RESONANCE FORM WITH A RELATIVE 5 PERCENT HALF WIDTH. IT IS CONCLUDED THE DESCRIBED RECEIVER IS HIGHLY SENSITIVE AND HAS A SMALL INERTIA. IN THE 25-300 MICROMETER RANGE THE APPARATUS HAS NARROW BAND SENSITIVITY WITH A POSSIBILITY OF TUNING THE ENTIRE WAVE RANGE BY A SIMPLE VARIATION OF CURRENT, AND CONSEQUENTLY MAGNETIC FIELD, IN A SUPERCONDUCTING SOLENOID. WHEN SWITCHING IT ON A WEAK MAGNETIC FIELD (H SMALLER THAN OR EQUAL TO 5 KOE) OR CUTTING OFF THE SOLENOID, IT OPERATES AS A NONSELECTIVE DETECTOR SENSITIVE TO RADIATION WITH LAMBDA LARGER THAN OR EQUAL TO 300 MUM WAVE LENGTH. A COMPARATIVELY SMALL RESISTANCE OF THE RECEIVER ELEMENT (5-10 KOHM) MAKES IT POSSIBLE TO OBTAIN A SMALL TIME CONSTANT, WHICH DETERMINES THE SPEED OF PHYSICAL PROCESSES IN A CRYSTAL.

UNCLASSIFIED

USSR

UDC 621.384.3

P
NAD', F. Ya., PANKOV, V. G., RULEV, K. A.

"Tunable Receiver of Long Wave Infrared Radiation"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 2, 1970, pp 371-375

Abstract: An apparatus is described, which operates as a selective narrow band tunable detector of infrared radiation in the 25-300 micrometer range and also, as a wide band "electron-bolometer" in the 300-2000 micrometer range. It consists of three bloc units: 1) the helium cryostat with a light guide, a superconducting solenoid, and a photosensitive element; 2) a stand for electron instruments; and 3) a modulator.

Its sensitivity is relatively independent of the wave length from several millimeters down to 600 micrometers. The sensitivity spectral characteristic of the apparatus at a magnetic field value of ~ 22.5 koe (as recorded by a vacuum monochromator with changeable echelette gratings which operates in the 20-2000 micrometer range) is presented. It has a definite resonance form with a relative 5 percent half-width. It is concluded the the described receiver is highly sensitive and has a small inertia.

1/2

USSR

NAD^r, F. Ya., et al., Radiotekhnika i Elektronika, Vol 15, No 2, 1970, pp 371-375

In the 25-300 micrometer range the apparatus has narrow-band sensitivity with a possibility of tuning the entire wave range by a simple variation of current, and consequently magnetic field, in a superconducting solenoid. When switching it on a weak magnetic field ($H \leq 5$ koe) or cutting-off the solenoid, it operates as a nonselective detector sensitive to radiation with $\lambda \geq 300 \mu m$ wave length. A comparatively small resistance of the receiver element (5-10 kohm) makes it possible to obtain a small time constant, which determines the speed of physical processes in a crystal. Orig. art has: 3 figures.

2/2

USSR

PAPKOV, V. I.

"Statistical Investigation of High-Speed Computer Programs"

Vychisl. Tekhnika [Computer Technology -- Collection of Works], No 2, Leningrad, Energiya Press, 1972, pp 61-67 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V656, by the author).

Translation: Problems of statistical analysis of programs for high-speed digital computers are studied. It is demonstrated that various versions of programs can be statistically analyzed, for which the results of analysis differ significantly. The relative nature of the results of statistical analysis is demonstrated. It is concluded that it is necessary to perform broader statistical studies.

1/1

- 90 -

172 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ALTERATION OF THE PERISTALSIS OF THE SMALL INTESTINE UNDER THE
INFLUENCE OF PITUITRIN -U-
AUTHOR--PANKOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 64-65
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SMALL INTESTINE, SURGERY, PITUITARY HORMONE, MUSCLE
STIMULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0690 STEP NO--UR/0219/70/049/006/0064/0065
CIRC ACCESSION NO--AP0131289
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131289

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON 9 DOGS WITH THIRY-VELLA FISTULA AND ADDITIONAL ENTEROSTOMY THE INTRAVENOUS INJECTION OF PITUITRIN (0.01-0.03 ML-KG) CAUSED NEITHER STIMULATION OF THE PERISTALSIS OF THE SMALL INTESTINE, NOR ITS INHIBITION IN INSTANCES WHEN IT WAS ACTIVATED WITH OMNOPON PROSERINE AND DIMECOLINE.
FACILITY: RYAZAN MEDICAL INSTITUTE.

UNCLASSIFIED

Acc. Nr.: AP0031626

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970 Vol 69, Nr 1, pp 75-76

THE AMOUNT OF COPPER AND MANGANESE CONTAINED IN EXPERIMENTAL
NEWGROWTHS OF ANIMALS AND IN OSSEOUS SARCOMAS OF MAN

S. D. Shevchenko, Ye. Ya. Pankov

Kharkov Research Institute of Prosthesis, Orthopedics and Traumatology

Copper and manganese content in diverse osseous newgrowths in man and animals (rabbits, rats), and also correlation of these elements were investigated. When calculated at zonal rate the amount of copper and manganese in tumours turned out to be higher by comparison with their level in intact bones. Correlation of these elements (Cu/Mn) in tumours rise sharply. The nature of proportional distribution of copper and manganese in tumours of different origin under examination disaccorded but little.

mk

2

REEL/FRAME

19691753

1/2 032 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ANOMALOUS BARRIER CAPACITANCE OF SEMICONDUCTORS WITH SHORT FREE
PATH LENGTH -U-
AUTHOR--PANKOV, YU.D. P
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 978-80
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--SEMICONDUCTOR R AND D, ELECTRIC CAPACITANCE, SEMICONDUCTOR
DIODE, ELECTRON MOBILITY, FREQUENCY CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1822 STEP NO--UR/0449/70/004/005/0978/0980
CIRC ACCESSION NO--AP0130652

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130652

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANOMALOUS DEPENDENCE OF THE BARRIER CAPACITANCE ON THE CONTACT P.D. WAS OBSD. IN DIODE STRUCTURES ON THE BASIS OF CDS FILMS WITH A LOW CARRIER MOBILITY (0.01-1 CM PRIME2-V SEC), WITH CU, AU, AND IN AS ELECTRODE MATERIALS. AN ANAL. OF THE FREQUENCY CHARACTERISTICS OF THE DIODES SHOWED THAT THEIR DISPERSION PROPERTIES WERE BEST DESCRIBED BY A MODEL OF A P,N JUNCTION WITH A CONTINUOUSLY DISTRIBUTED ELEC. COND., $\Delta(x)$. THE ANOMALOUS BARRIER CAPACITY IS A CONSEQUENCE OF SUCH A $\Sigma(x)$. FACILITY: GOR*K. ISSUED. FIZ. TEKH. INST., GORKI, USSR.

UNCLASSIFIED

USSR

UDC 621.391.81

PANKOV, Yu. N.

"Peculiarities of Using Complex Probing Signals on Point and Extended Objects"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1971, vyp. 225, pp 95-104 (from RZh-Radiotekhnika, No 12, Dec 71, Abstract No 12A55)

Translation: The author considers the possibility of using known complex signals with a known level of correlation residues to irradiate a large number of point or extended objects. Signals of the Barker code and M-sequence type are considered. Analytic and graphic relations are found for the signal-to-noise ratios of the given types of signals as a function of the number of objects observed. An estimate is made of the quality of the radiation image or the observability of the object, i. e. the ratio of the amplitude pip at the instant of pulse cessation to the average value of the noise envelope regardless of its origin. Analytical expressions are derived for estimating the observability, and graphs are plotted for the observability as a function of the contraction coefficient and the number of objects. The following conclusions are drawn from the resultant

1/2

USSR

PANKOV, Yu. N., Tr. Mosk. aviats. in-ta, 1971, vyp. 225, pp 95-104

relations: 1) The observability of a point object decreases when a complex signal is used instead of the conventional unmodulated signal, which is due to the appearance of correlation residues during signal contraction, increasing the background power. 2) Losses of observability decrease with an increase in code significance. 3) The signal-to-noise ratio or observability of objects deteriorates with an increase in the number of objects observed. Ye. L.

2/2

- 59 -

PANKOVA, A.S.

SPRS 56.499
14 JULY 72

84

COMPARATIVE CHARACTERISTICS OF MORPHOLOGICAL CHANGES IN THE KIDNEYS OF RATS WITHIN EXPOSURE TO TRAUMATIC AND LONGITUDINAL ACCELERATIONS WITH AN INTENSITY OF FOUR G

(Article by A. S. Pankova; Moscow, Akad. Nauk SSSR, Meditsinskoye Sostoyaniye i Ispytaniya (Current Problems in Space Biology and Medicine), Moscow, 1971, pp 215-219)

A study of prolonged exposure to small accelerations is of the greatest importance for ascertaining the mechanism of body adaptation to changes in gravitation conditions and will make it possible to trace the dynamics of this process. Among the other adaptation mechanisms more than a little role is played by the kidneys. The changes setting in in the kidneys are, on the one hand, a reflection of the overall disorder in circulation, and on the other hand, are directed to maintaining water-mineral equilibrium under conditions of impaired homeostasis.

In the literature which has come to our attention the studies devoted to morphological changes in the kidneys for the most part apply either to brief exposure to great accelerations or to prolonged repeated low accelerations (V. V. Korolev, 1963, 1964, 1967; V. G. Petukhin, 1963; Seneljar and Loubiere, 1960; Silvestro and Britton, 1960).

The purpose of this investigation was a study of morphological changes in the kidneys in dependence on the duration and direction of the exposure and the detection of compensatory-adaptive reactions in the kidneys caused by the influence of the hypothalamic-hypophyseal neurosecretory system and directed to a decrease in hemodynamic disorders.

The experiment was conducted on 76 white male rats weighing 200-280 g. Prolonged exposure to acceleration was attained by rotating the animals on a two-arm centrifuge with an arm radius of 70 cm.

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DIFFERENTIAL PHOTOMETRIC DETERMINATION OF TITANIUM WITH
DIANTIPYRYLMETHANE IN PRODUCTS FROM THE PREPARATION OF PIGMENT TITANIUM
AUTHOR--(02)--ZAMYSOLV, R.D., PANKOVA, I.A. P
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH. MATER. TKH. PRIMEN. 1970, (11), 55-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--PHOTOMETRIC ANALYSIS, TITANIUM COMPLEX, PIGMENT, IRON,
VANADIUM, ORE/(U)FEK M COLORIMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0689 STEP NO--UR/0303/70/000/001/0055/0056
CIRC ACCESSION NO--AP0119597
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119597

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TI PRIME4 POSITIVE COMPLEX WITH DIANTIPYRYLMETHANE HAS AN ABSORBANCE MAX. AT GAMMA SUBMAX 380-400 NM; ITS MOLAR ABSORPTIVITY IS 6.8 TIMES 10 PRIME4. MEASUREMENT AT 485 NM IS PROPOSED FOR HIGHER CONCNS. OF TI. THE INTERFERENCE OF FE PRIME3 POSITIVE AND V PRIME5 POSITIVE IS ELIMINATED BY REDN. WITH ASCORBIC ACID. THE COLOR IS DEVELOPED AFTER 15 MIN HEATING ON A WATER BATH. TO ANALYZE TIO SUB2, DISSOLVE A 0.1 G SAMPLE AND 2.5 G (NH SUB4) SUB2 SO SUB4 IN 5 ML H SUB2 SO SUB4 BY HEATING, DIL. WITH 50-60 ML. 1:1 H SUB2 SO SUB4 WITH H SUB2 O TO 200 ML. HEAT A 10 ML ALIQUOT WITH 10 ML 1:1 HCL FOR 10 MIN ON A BOILING WATER BATH, ADD 15 ML REAGENT (2PERCENT DIANTIPYRYLMETHANE AND 0.2PERCENT ASCORBIC ACID IN 6PERCENT H SUB2 SO SUB4) TO THE HOT SOLN., KEEP 10 MIN AT ROOM TEMP., COOL, ADD H SUB2 O TO 50 ML AND MEASURE THE ABSORBANCE IN A 10 MM CELL BY USING THE FEK-M PHOTOCOLORIMETER WITH LIGHT FILTER NO. 3. THE ABSORBANCE OF THE TEST SOLN. AND THAT OF THE STD. SOLN. WITH 3.5 MG TIO SUB2-50 ML IS MEASURED IN THE DIFFERENTIAL ARRANGEMENT. TI ORES ARE FUSED WITH K SUB2 S SUB2 O SUB7, DISSOLVED IN 10PERCENT H SUB2 SO SUB4, AND THE ALIQUOT IS TREATED IN THE SAME WAY. ANAL. OF PIGMENTS AND ORES WITH 12-99PERCENT GAVE SATISFACTORY RESULTS; THE STD. DEVIATION WAS 0.04-0.15PERCENT.

UNCLASSIFIED

USSR

UDC: 661.143

PIVNEVA, S. P., KRONGAUZ, V. G., PAN'KOVA, L. T., GUGEL, B. M.

"Formation of (Zn·Cd)S Solid Solutions During Sintering"

Sb. Nauch. tr. VNIi lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Very Pure Substances), 1971, vyp. 6, pp 36-41 (from RZh-Khimiya, No 15, Aug 72, Abstract No 15L184)

Translation: The high sensitivity of the method of diffusion reflection spectra to analysis of the composition and degree of homogeneity in the ZnS·CdS system is used for studying the peculiarities of the formation of a solid solution as a function of preparative conditions and the quality of the raw material. The authors reveal the degree to which the rate of sintering is affected by the quality of the initial zinc- and cadmium sulfides, treatment of ZnS with various "washing agents" (NH_4OH , NH_4Cl and KOH), conditions of heating the charge, and the gas atmosphere (vacuum, hydrogen, argon, hydrogen sulfide). Existing methods for charge preparation and equipment for calcining do not ensure complete reproducibility of the product even in the presence of fluxes.

1/1

- 27 -

USSR

UDC 621.391:519.27

NEZHMETDINOV, T. K., PANKOVETS, V. V., ROMANOV, I. M.

"Effectiveness of Introducing Adaptation in Complex Radio Systems with Information and Structural Adaptation"

Priyem i obrabotka inform. v slozhn. inform. sistemakh -- V sb (Information Reception and Processing in Complex Information Systems -- collection of works), Vyp. 2, Kazan', Kazan' University, 1970, pp 14-19 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A37)

Translation: The savings from introduction of adaptation in individual system links -- the receiver and the device for subsequent information processing -- are estimated. The estimate is made by comparing the "income" from increasing the properly received information and the "expenses" determined by the necessary complication of the system. There is 1 illustration and a 1-entry bibliography.

1/1

USSR

UDC 621.791.85

NOSKOV, D. A., and PANKOVETSK, N. F., Tomsk

"Explosionlike Processes in the Pulse Working of Materials with an Electron Beam"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 70, pp 16-20

Abstract: In experiments on the pulsating electron beam working of steel and molybdenum, intensive sputtering of fine, glowing droplets from the electron beam zone of the impact was observed. Droplet size reached tens of microns. The droplets moved with considerable velocities and, on reaching the substratum surface, left an elongated trace on it. It is suggested that these droplets are expelled by forces induced by thermal explosion. The beam strength concentration was higher than 10^7 watts/cm². Here the energy required for thermal explosion is accumulated in 5-10 microseconds. Metal in the impact zone was melted and expelled in droplet form during this time. The amount of melt expelled by forces of thermal explosion is tens of times greater than the amount of metal evaporated during this same period. For example, when steel was being worked, during a single pulse it was possible to remove up to $2 \cdot 10^{-4}$ g, while about $5 \cdot 10^{-6}$ g could be evaporated during this period. Explosionlike processes were also observed when diamond was worked on with a pulsating electron beam. Other causes of this phenomenon can be thermal stresses exceeding the strength of the material worked with and a rise in pressure within a volume in which the energy of the electron beam is transmitted

1/2

USSR

NOSKOV, D. A., and PANKOVETSK, N. F., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 70, pp 16-20

due to decomposition of certain chemical compounds constituting part of the solid. Since the nature of the explosionlike process depends on the working conditions and beam parameters, it can be controlled.

2/2

USSR

UDC 519.24

LADOKHIN, V. I., KOBCHIKOV, A. V., NEZHMETDINOV, T. K., PANKOVETS, V. V.,
IVANYCHEV, Yu. N.

"Experimental Determination of the Correlation Function of Processes of Changing Intensity in Adaptive Information Processing Systems"

Priyem i Obrabotka Inform. v Slozhn. Inform. Sistemakh [Reception and Processing of Information in Complex Information Systems -- Collection of Works], No 2, Kazan', Kazan University Press, 1970, pp 141-146, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V202 by Yu. Shevchenko).

Translation: The problem of determination of the sampling estimate of the correlation function in adaptive information processing systems (ADIPS) on the basis of observation data is studied. The Cauchy-Bunyakovskiy inequality is used to write an upper estimate for the dispersion of the estimate of the correlation function. In conclusion, the authors present examples of practical problems which can be solved using the results they produce.

Abstractors Note. The replacement of the actual processes occurring in ADIPS with stable Gaussian processes in this work requires foundation.

USSR

UDC 621.372.82.092.22

PANKOVSKIY, A. A.

"Wave Structure of a Flat Impedance Waveguide"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp.119, pp 25-31 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B105)

Translation: The author studies a flat waveguide with isotropic, uniform impedance of its lower and upper walls. Solutions are obtained for a dispersion equation which determines the mode spectra of the waveguide. Original article: five illustrations and three bibliographic entries. N.S.

UDC 621.039.51

USSR

YUROVA, L. N., ROMODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO,
D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems
With Heterogeneities"

Fiz. Yadern. Reaktorov (Nuclear Reactor Physics -- Collection of
works), No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from
Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract
No 3.50.76)

Translation: Neutron physics problems are frequently solved by
applying the theory of perturbations -- to calculate the change
in criticality of nuclear reactors or various neutron flux func-
tionals. The possibility is studied of using the theory of per-
turbations for calculation of reactor shielding. The theory of
perturbations (generally speaking of high orders) can also be
applied to the unstable equation of neutron transfer. In the
experiments described with pulsed neutron source, a change in
decay constants was achieved by two means: by changing the geo-
metric size of the specimen or by changing its diffusion charac-

1/7

USSR

YUROVA, L. N., et al., Fiz. Yadern. Reaktorov, No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

teristics (introduction of absorbers or scattering agents in homogeneous or discrete form, etc.). In the experiment discussed, the additional possibility is demonstrated of changing the decay constant by changing the position of heterogeneities in the moderator with constant volume ratio. This provides a method for studying the diffusion characteristics of heterogeneous systems or systems with local heterogeneities, since a new experimental dependence appears and, consequently, it can be compared with various calculation methods. 8 figures, 7 biblio. refs.

2/2

USSR

UDC 621.039.51

YUROVA, L. N., ROMODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO, D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems With Heterogeneities"

Fiz. Yadern. Reaktorov (Nuclear Reactor Physics -- Collection of works), No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

Translation: Neutron physics problems are frequently solved by applying the theory of perturbations -- to calculate the change in criticality of nuclear reactors or various neutron flux functionals. The possibility is studied of using the theory of perturbations for calculation of reactor shielding. The theory of perturbations (generally speaking of high orders) can also be applied to the unstable equation of neutron transfer. In the experiments described with pulsed neutron source, a change in decay constants was achieved by two means: by changing the geometric size of the specimen or by changing its diffusion characteristic.

1/2

52

USSR

YUROVA, L. N., et al., Fiz. Yadern. Reaktorov, No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

teristics (introduction of absorbers or scattering agents in homogeneous or discrete form, etc.). In the experiment discussed, the additional possibility is demonstrated of changing the decay constant by changing the position of heterogeneities in the moderator with constant volume ratio. This provides a method for studying the diffusion characteristics of heterogeneous systems or systems with local heterogeneities, since a new experimental dependence appears and, consequently, it can be compared with various calculation methods. 8 figures, 7 biblio. refs.

2/2

172 030
UNCLASSIFIED
TITLE--PHOTODISSOCIATION OF WATER, HEAVY WATER, AND HYDROGEN PEROXIDE ON A
MAGNESIUM OXIDE SURFACE -U-
AUTHOR--PANKRATOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 126-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN PEROXIDE, MAGNESIUM OXIDE, HEAVY WATER, EPR,
PHOTOCHEMISTRY, DISSOCIATION, UV IRRADIATION, ELECTRON REFLECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1297
CIRC ACCESSION NO--AP0109381
STEP NO--UR/0456/70/004/002/0126/0130
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109381

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FREE RADICAL PRODUCTS FORMED BY UV IRRADN. OF WATER (H SUB2 O, D SUB2 O) AND H SUB2 O SUB2 ADSORBED ON MGO WERE STUDIED BY EPR AND ELECTRON REFLECTION SPECTRA. THE ADSORPTION OF H SUB2 O AND D SUB2 O FROM THE GASEOUS PHASE ON MGO DOES NOT PRODUCE PARAMAGNETIC PARTICLES. IRRADN. OF THE SYSTEMS H SUB2 O-MGO (600DEGREES) AND D SUB2 O-MGO (600DEGREES) AT 20DEGREES FOR SOME SEC PRODUCED SURFACE COLORING AND AN EPR SIGNAL 2 V WIDE WITH G EQUAL 1.999 AND ANOTHER WEAK SIGNAL WITH A HYPERFINE STRUCTURE IN THE REGION G EQUAL 2.003. IN THE SPECTRUM OF DIFFUSION REFLECTION THERE IS A STRONG ABSORPTION IN THE NEAR IR REGION (1200 NM) AND WEAK ABSORPTION BANDS IN THE UV REGION: 234 NM FOR H SUB2 O AND 245 NM FOR D SUB2 O. THE SIGNAL WITH G EQUAL 1.999 IS TYPICAL FOR AN ELECTRON LOCALIZED CLOSE TO THE O VACANCY FORMED BY VACUUM HEATING AT 600DEGREES ON THE OXIDE SURFACE. WITH A TEMP. INCREASE TO 900DEGREES THE SIGNAL PRACTICALLY DISAPPEARS. THE PHOTOPRODUCT THAT GENERATES THE LINE WITH G EQUAL 2.003 IS OBSD. AT 77DEGREEK AND AT ROOM TEMP. THE PHOTOPRODUCT IS A FREE RADICAL THAT IS PROBABLY FORMED BY THE COMPLETE TRANSFER OF AN ELECTRON BETWEEN A WATER MOL. AND THE SURFACE. A SIGNAL WITH G EQUAL 2.035 IS OBSD. ONLY AT 77DEGREES. THIS PHOTOPRODUCT IS STRONGLY BOUND TO THE OXIDE SURFACE. IT IS PROBABLY THE RESULT OF THE INTERACTION OF OH RADICALS WITH THE MGO SURFACE. IRRADN. OF ADSORBED H SUB2 O SUB2 PRODUCES HYDROPEROXIDE RADICALS. FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--PHOTODISSOCIATION OF WATER, HEAVY WATER, AND HYDROGEN PEROXIDE ON A
MAGNESIUM OXIDE SURFACE -U-
AUTHOR--PANKRATOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 126-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN PEROXIDE, MAGNESIUM OXIDE, HEAVY WATER, EPR,
PHOTOCHEMISTRY, DISSOCIATION, UV IRRADIATION, ELECTRON REFLECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1297 STEP NO--UR/0456/70/004/002/0126/0130
CIRC ACCESSION NO--AP0109381
UNCLASSIFIED

272 030

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109381

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FREE RADICAL PRODUCTS FORMED BY UV IRRADN. OF WATER (H SUB2 O, D SUB2 O) AND H SUB2 O SUB2 ADSORBED ON MGO WERE STUDIED BY EPR AND ELECTRON REFLECTION SPECTRA. THE ADSORPTION OF H SUB2 O AND D SUB2 O FROM THE GASEOUS PHASE ON MGO DOES NOT PRODUCE PARAMAGNETIC PARTICLES. IRRADN. OF THE SYSTEMS H SUB2 O-MGO (600DEGREES) AND D SUB2 O-MGO (600DEGREES) AT 20DEGREES FOR SOME SEC PRODUCED SURFACE COLORING AND AN EPR SIGNAL 2 V WIDE WITH G EQUAL 1.999 AND ANOTHER WEAK SIGNAL WITH A HYPERFINE STRUCTURE IN THE REGION G EQUAL 2.003. IN THE SPECTRUM OF DIFFUSION REFLECTION THERE IS A STRONG ABSORPTION IN THE NEAR IR REGION (1200 NM) AND WEAK ABSORPTION BANDS IN THE UV REGION: 234 NM FOR H SUB2 O AND 245 NM FOR D SUB2 O. THE SIGNAL WITH G EQUAL 1.999 IS TYPICAL FOR AN ELECTRON LOCALIZED CLOSE TO THE O VACANCY FORMED BY VACUUM HEATING AT 600DEGREES ON THE OXIDE SURFACE. WITH A TEMP. INCREASE TO 900DEGREES THE SIGNAL PRACTICALLY DISAPPEARS. THE PHOTOPRODUCT THAT GENERATES THE LINE WITH G EQUAL 2.003 IS OBSD. AT 77DEGREEK AND AT ROOM TEMP. THE PHOTOPRODUCT IS A FREE RADICAL THAT IS PROBABLY FORMED BY THE COMPLETE TRANSFER OF AN ELECTRON BETWEEN A WATER MOL. AND THE SURFACE. A SIGNAL WITH G EQUAL 2.035 IS OBSD. ONLY AT 77DEGREES. THIS PHOTOPRODUCT IS STRONGLY BOUND TO THE OXIDE SURFACE. IT IS PROBABLY THE RESULT OF THE INTERACTION OF OH RADICALS WITH THE MGO SURFACE. IRRADN. OF ADSORBED H SUB2 O SUB2 PRODUCES HYDROPEROXIDE RADICALS. FACILITY: Leningrad, Gos. Univ., Leningrad, USSR.

UNCLASSIFIED

USSR

UDC: None

BASOV, N. G., MAL'TSEV, K. K., MARKIN, Ye. P., MARTYIENKO, V. D.,
ORAYEVSKIY, A. N., PANKRATOV, A. V., SAGITOV, R. G., and SEACHIKOV,
A. N.

"Chemical Laser of Mixed Difluoramin With Hydrogen"

Moscow, Sbornik kratkiye soobshcheniya po fizike, No 11, November
1971, pp 3-9

Abstract: This brief communication reports oscillations obtained from oscillatory-rotatory transitions of HF molecules resulting from the reaction of HF_2H with hydrogen, specifically the time variations of the gain yielded by the mixture as a function of the experimental conditions. The experimental equipment consisted of two lasers, an oscillator, and an amplifier, excited by an electrical discharge through the mixture. The oscillator was a quartz tube 85 cm long and 1.7 cm in diameter, with LiF windows set at the Brewster angle. Determinations were made of the optimal relationships between the pressures of the HF_2H and H_2 in the mixture, and a curve is plotted of the energy of the pulse oscillation in the mixture as a function of the ratio of the two pressures. Curves are also plotted for the gain factor in the mixture as a function of time. The authors express their thanks to L. V. Kulakov for his help in plotting the pulse energy spectrum.

1/1

USSR

KITSENKO, A. B., PANKRATOV, I. M., STEPANOV, K. N. (Physicotechnical Institute of the Ukrainian Academy of Sciences)

"Nonlinear Stage of Excitation of Monochromatic Plasma Oscillations in a Magnetic Field by a Charged-Particle Beam"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; January 1974, pp 166-75

Abstract: The authors consider the excitation of monochromatic longitudinal plasma oscillations in a magnetic field by a beam of oscillators, or charged particles, traversing the plasma parallel to the magnetic field with a constant velocity, possessing identical Larmor radii and uniformly distributed with respect to azimuthal angle. For "glancing" waves the major mechanism leading to oscillation saturation is the disappearance of resonance between the wave and particle due to variation of the beam particle velocity component along the magnetic field induced by the oscillation field. For oscillations propagating perpendicularly to the magnetic field, saturation of the oscillations is due to variation of the transverse velocity and of the azimuthal angle of the beam particles. The oscillation amplitudes under nonlinear conditions are evaluated for all of these cases.

1/1 The article includes 43 equations. There are 17 references.

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--METHOD OF INVESTIGATING THE DEFORMED STATE OF ROTOR TYPE FORGINGS
-U-
AUTHOR--(02)-KAMNEV, P.V., PANKRATOV, I.N.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, ENERGO MASHINOSTROYENIYE, NO. 2, 1970, PP 30-32
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--METAL EXTRUSION, BIBLIOGRAPHY, METAL DEFORMATION, METAL
FORGING, TURBINE ROTOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1637 STEP NO--UR/0114/70/000/002/0030/0032
CIRC ACCESSION NO--AP0120391
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120391

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS ARE EXAMINED FOR STUDYING THE IRREGULARITY OF THE DEFORMED STATE OF FORGINGS DURING EXTRUSION OPERATIONS; A METHOD OF PRODUCING SPECIMENS IS PRESENTED USING A THREE DIMENSIONAL COORDINATE GRID. RESULTS ARE PRESENTED FOR A STUDY OF THE PRECISION AND IDENTITY OF THE SPECIMENS PRODUCED WITH THE THREE DIMENSIONAL COORDINATE GRID AND THE ADMISSIBILITY OF STUDYING SPECIMENS WITH A THREE DIMENSIONAL COORDINATE GRID IS SHOWN WHEN SIMULATING THE PROCESS OF EXTRUSION.

UNCLASSIFIED

USSR

UDC 619:616.981.42+616.981.51.08447:636.32/.38

GRYAZIN, V. I., Professor, SAL'NIKOV, F. Ye. (Deceased), PANKRATOV, I. D.,
TYCHINA, O. F., Candidates of Veterinary Sciences, and ZHILA, M. Ya., Junior
Scientific Associate Kazakh Scientific Research Veterinary Institute

"Study of a Combined Vaccine Against Brucellosis and Anthrax in Sheep"

Moscow, Veterinariya, No 7, 1970, pp 38-40

Abstract: A combined dry vaccine against brucellosis and anthrax was prepared from standard strains No. 19 and STI-1 of Brucella and B. anthracis, respectively. Guinea pigs and sheep were immunized with vaccine containing the two antigens in a ratio corresponding to that which would be used in separate administration of monovaccines against the two diseases. Intensive immunity to infection with virulent strains of Br. melitensis and B. anthracis developed, indicating an absence of mutual interference between the two antigens. Administration of the combined vaccine to sheep produced immunity to anthrax that lasted for more than 2 years and immunity to brucellosis for up to 17 months.

1/1

- END -

USSR

UDC 619.616.988.43-022.39:636.29

KINDYAKOV, V. I., NAGUMANOV, F. M., BALGANBAYEV, Ye. Kh., ZINOV'YEV, B. S.,
PANKRATOV, L. D., and CHUFARIN, A. M., Kazakh Scientific Research Veterinary
Institute

"The Epizootiological Role of Wild Even-Toed Ungulates in Foot-and-Mouth
Disease"

Moscow, Veterinariya, No 9, Sep 70, pp 52-53

Abstract: Experiments conducted with roe deer, saiga antelopes, and Caspian deer (marals) showed that these animals are highly susceptible to infection with foot-and-mouth disease. An outbreak of foot-and-mouth disease caused by the A₂₂ virus variant occurred in 1967 among cattle that were isolated from contact with other cattle. The virus was introduced by a hunter who had brought the carcass of an infected saiga antelope into the locality. Mass infections of saiga antelope with foot-and-mouth disease occur. The animals showed typical symptoms of the disease and the A₂₂ virus was isolated from them. Under the conditions prevalent in Kazakhstan, saiga antelope form one of the principal sources of transmission of foot-and-mouth disease to farm animals; the antelope become infected with this disease from cattle and transmit it to

1/2

- 72 -

USSR

KINDYAKOV, V. I., et al., Veterinariya, No 9, Sep 70, pp 52-5.

other cattle. Measures taken by the veterinary service to prevent transmission of foot-and-mouth disease by saiga antelopes involve constant observation of the antelope herds to check for the presence of infection, tracing of the routes of migration of these herds, and prevention of infection of the antelope themselves. Similar measures should be taken with respect to other wild even-toed ungulates in Kazakhstan.

2/2

USSR

UDC: 621.396.6-181.48

BLINOV, I. G., YEL'CHANINOV, Ye. I., KRASANOV, V. G., PANKRATOV, L. M.,
MELEKHIN, Yu. Ya.

"The UVN-73P-1 Installation for Vacuum Application of Metal Films"

Elektron. promst'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific
and Technical Collection), 1972, No 1, pp 83-85 (from RZh-Radiotekhnika, No
8, Aug 72, Abstract No 8V290)

Translation: The paper presents the basic results of development of an
industrial installation for vacuum deposition of metal films. The par-
ticulars of design of the principal functional units are considered.
Experimental results are given on the operational characteristics of the
installation. Resumé.

1/1

U33R

P UDC 621.396.6-161.5

BLINOV, I. G., VALEYEV, A. S., MELEKHIN, Ye. Ya., MIKHNEVICH, V. A., PANKRATOV, L. M.,
SLADKOV, V. I.

"Cathode Vaporization of Thin Films of Tantalum"

Elektron. prom-st', Nauchno-tekhn. sb. (The Electronics Industry, Scientific and
Technical Collection), 1970, No 1, pp 69-70 (from RZh-Radiotekhnika, No 10, Oct 70,
Abstract No 10V232)

Translation: A brief description is given of the Soviet UV-62P-1 device for pro-
ducing tantalum films. The unit can be used to make films with surface resistance
spread of less than 4% in a single batch, and less than 7% from batch to batch.
Two illustrations. N. S.

1/1

USSR

UDC: 621.317.384

SHAROV, P. P., PANKRATOV, L. V.

"A Device for Measuring SHF Power"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 280583, Class 21, filed 7 Apr 69, p 50

Abstract: This Author's Certificate introduces a device for measuring SHF power which contains a dielectric vessel with a resistive film applied to its surface, series connected thermocouples, and an indicator device. As a distinguishing feature of the patent, sensitivity is increased and the dynamic range of measurable powers is extended by locating the hot junctions of the thermocouples on the inner surface of the vessel, while the cold junctions are fastened to the massive dielectric sleeve.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--CONDITIONED INFLUENCES ON EXCITATION THRESHOLDS OF HUMAN CUTANEOUS
ANALYSER -U-
AUTHOR-(02)-PANKRATOV, M.A., POGORELOVA, P.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL VYSSNEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 1, PP
71-77
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SENSORY PHYSIOLOGY, CONDITIONED REFLEX, SKIN,
ELECTROPHYSIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1982/0809 STEP NO--UR/0247/70/020/001/0071/0077
CIRC ACCESSION NO--AP0052245
UNCLASSIFIED

2/2 '015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052245

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXCITATION THRESHOLDS OF THE CUTANEOUS ANALYSER WERE DETERMINED IN FOURTEEN SUBJECTS (BY VERBAL AND VEGETATIVE REACTIONS) BEFORE AND AFTER ELABORATION OF A CONDITIONED REFLEX TO A SOUND, REINFORCED BY SHOCKS OF SINUSOIDAL CURRENT OF 50 TO 2000 C-S. CONDITIONING TO SOUNDS REINFORCED BY CURRENT OF LOW (100 TO 400 C-S), MEDIUM (1000 C-S) AND HIGH (1600 C-S) FREQUENCIES WAS ACCOMPANIED BY A DECREASE IN THRESHOLDS. EXTINCTION OF CONDITIONED REFLEXES LED TO HIGHER THRESHOLDS IN CASE OF REINFORCEMENT WITH LOW FREQUENCY CURRENT AND TO LOWER THRESHOLDS IN THE OTHER TWO CASES. THE DATA OBTAINED INDICATE THAT ELECTRICAL STIMULI OF DIFFERENT FREQUENCY ACTIVATE DIFFERENT FUNCTIONAL STRUCTURES OF THE CUTANEOUS ANALYSER.

UNCLASSIFIED

UNCLASSIFIED
TITLE--ANALYSIS OF IMPURITIES IN GASES -U-

AUTHOR--(05)-RYBIN, E.N., KOGAN, YA.I., KOZHEVNIKOV, A.G., LYUSBKUNIN,
G.G., PANKRATOVA, M.E.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,484
REFERENCE--OTKRYTIYA, IZOBRET., PROM, OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, AMINO ALCOHOL, CHEMICAL PURITY, GAS ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
ROXY REEL/FRAME--1994/0182

STEP NO--UR/0482/70/000/000/0000/0000

IRC ACCESSION NO--AA0114568

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

IRC ACCESSION NO--AA0114568

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE METHOD OF ANALYZING THE
IMPURITIES IN GASES DESCRIBED IN U.S.S.R. 262,484, THE LEVEL OF
DETECTION OF CONDENSATION NUCLEI, CONTG. MOLS. OF AN ACID OR AN
ANHYDRIDE, IS INCREASED BY USING AMINO ALCS.

UNCLASSIFIED

USSR

UDC: 632.95

KULAKOV, V. N., PANKRATOVA, M. F., PINEGINA, Yu. M.

"Synthesis of Benzothiophene From Styrene or Ethylbenzene"

Moscow, Khimiya seraorgan. soyedin., soderzhashchikhsya v neftyakh i nefteproduktakh--sbornik (Chemistry of Organosulfur Compounds Present in Petroleum and Petroleum Products--collection of works), Vol 9, "Vyssh. shkola", 1972, pp 25-31 (from RZh-Khimiya, No 10, May 73, abstract No 10N535 by T. A. Belyayeva)

Translation: Benzothiophene (I), whose derivatives have insecticidal, fungicidal and growth-regulating properties, is synthesized from styrene or ethylbenzene and H_2S on dehydrating catalysts. The authors investigate the influence which a change in the conditions of the experiments have on the results of the process, and make a comparative evaluation of the activity of three dehydrating catalysts: industrial catalyst K-5, an aluminochromium catalyst (78% Al_2O_3 , 18% Cr_2O_3 , 4% K_2O), and the catalyst FeS/Al_2O_3 prepared by the Mohr-Grinsfelder method. The experiments were done in stainless steel reaction vessels of the flow-through type with 70 and 200 ml capacities; the duration of an experiment was 2-2.5 hours. The catalysts were analyzed by the method of 1/2

USSR

KULAKOV, V. N., et al., Chemistry of Organosulfur Compounds Present in Petroleum and Petroleum Products -- collection of works, Vol 9, "Vyssh. shkola" 1972, pp 25-31

gas-liquid chromatography. A good yield of compound I (27% as calculated from the reacted styrene [33.5% of theoretical]) was attained on the $\text{Cr}_2\text{O}_3/\text{Al}_2\text{O}_3$ catalyst at a volumetric rate of 0.5 hr^{-1} and a hydrogen sulfide to styrene ratio of 11 moles/mole. It is shown that for the given process the most active of the catalysts studied were the aluminochromium and $\text{FeS}/\text{Al}_2\text{O}_3$. With continuous use, the activity of the catalyst falls off fairly rapidly, which means that it must be periodically regenerated. It is shown that under identical conditions the yield of benzothiophene from styrene is practically equal to the yield from ethylbenzene. Benzothiophene of 97-99% purity results after redistillation of the catalyst on a clear rectification column.

2/2

- 42 -

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--HELIUM CRYOSTATS WITH NITROGEN COOLING -U-
AUTHOR--(02)-PANKRATOV, N.A., GOLUBKOV, V.S.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, OPTIKO-MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
70-75
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYOSTAT, DEWAR VESSEL, LIQUID HELIUM, LIQUID NITROGEN,
COOLING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1353 STEP NO--UR/0237/70/000/001/0070/0075
CIRC ACCESSION NO--AP0123311
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0123311

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. BASIC SCHEMES OF CRYOSTATS AND DEWAR VESSELS FOR LIQUID HELIUM WITHOUT LIQUID NITROGEN COOLING ARE INVESTIGATED. A COMPARISON WAS MADE OF THE RELATIVE EVAPORABILITY OF HELIUM IN NITROGENLESS CRYOSTATS AND IN CRYOSTATS WITH SCREENS COOLED BY LIQUID NITROGEN.

UNCLASSIFIED

USSR

UDC: 539.3:534.1

RASSUDOV, V. M., KRASYUKOV, V. P., PANKRATOV, N. D.

"Stability of a Heated Shallow Shell of Constant Twist"

Nauch. tr. Saratov. politekhn. in-t (Scientific Works of Saratov Polytechnical Institute), 1970, vyp. 49, pp 75-79 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V264)

Translation: The authors study the stability of a shallow shell of rectangular planform in a temperature field, assuming that the curvatures of the shell in two directions are equal to zero, and that twist is a constant quantity. The modulus of elasticity and coefficient of linear expansion depend on temperature. The initial state of the shell is taken as momentless, and the problem is described by a differential equation of eighth order with respect to the function of displacements. Hinged support of the edges is considered. The critical temperature is found. The effect of the temperature dependence of the coefficient of linear expansion is evaluated. Ya. M. Grigorenko.

1/1

- 124 -

USSR

UDC 539.3

ZHELEZOVSKAYA, L. A., KRASYUKOV, V. P., PANKRATOV, N. D., RASSUDOV, V. M.

"Calculation of Hollow Shells in a Temperature Field"

Nauch. tr. Saratov. politekhn. in-t (Scientific Works of Saratov Polytechnical Institute), 1970, No. 49, pp 79-83 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V125)

Translation: A hollow shell rectangular in plan with constant major curvatures and heated according to a linear law over the thickness and according to an arbitrary law along the coordinates in the plan is discussed. For the case when the temperature changes only over the thickness and along one of the coordinates in plan the system of equations for shell equilibrium in displacements reduces to a differential equation of the eighth order relative to the displacement function. The latter is integrated for a shell in which two edges (along which the temperature is a variable) are fastened in an arbitrary manner and the two others are hinged. The general solution is given in the form of the sum of a particular solution of the nonhomogeneous equation and the solution of the corresponding homogeneous equation. The first is assumed to be known and the second is obtained in the form of a unary series. Numerical results are not given. V. M. Kulakov.

1/1